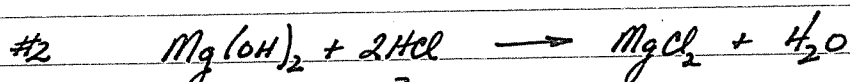


m	1.00g	?
mm	84.01g/mol	36.46g/mol
η	0.0119 mol	0.0119 mol

$$m_{\text{HCl}} = \eta \times \text{mm}$$

$$= 0.0119 \times 36.46$$

$$= 0.434\text{g}$$

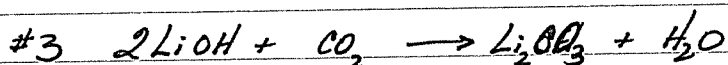


m	1.00g	?
mm	58.33g/mol	36.46g/mol
η	0.0171 mol	0.0342

$$m_{\text{HCl}} = \eta \times \text{mm}$$

$$= 0.0342 \times 36.46$$

$$= 1.25\text{g}$$

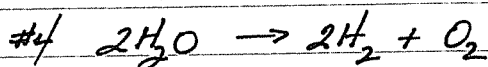


m	1000g	?
mm	23.95g/mol	44.01g/mol
η	41.75 mol	20.88 mol

$$m_{\text{CO}_2} = \eta \times \text{mm}$$

$$= 20.88 \times 44.01$$

$$= 918.9\text{g}$$

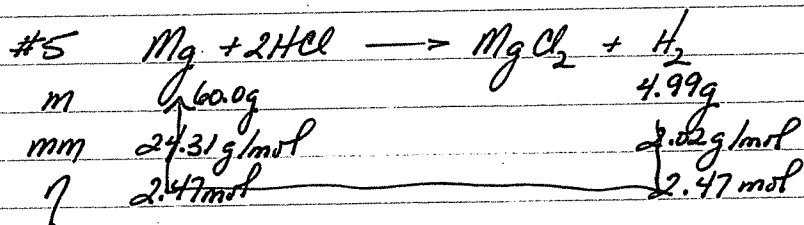


m	12g	?
mm	18.02g/mol	
η	0.666 mol	0.333 mol

$$\# \text{O}_2 \text{ molecules} = \eta \times \text{Av \#}$$

$$= 0.333 \times 6.02 \times 10^{23}$$

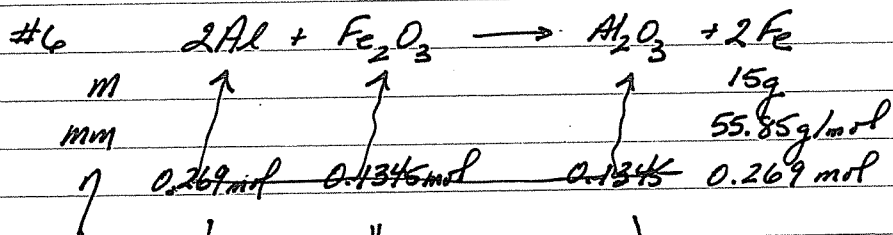
$$= 2.00 \times 10^{23}$$



$$m = \eta \times \text{mm}$$

$$= 2.47 \times 24.31$$

$$= 60.0\text{g}$$



(a)

$$mm = 159.7 \text{ g/mol}$$

$$\therefore m_{\text{Fe}} = \eta \times mm$$

$$= 21.5 \text{ g}$$

(c)

$$m_{\text{Al}_2\text{O}_3} = \eta \times mm$$

$$= 0.1345 \times 101.96$$

$$= 13.7 \text{ g}$$

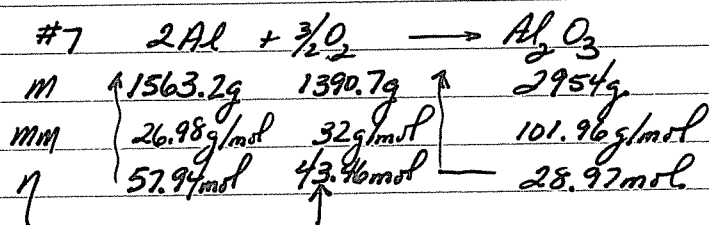
(b)

$$mm = 26.98 \text{ g/mol}$$

$$m_{\text{Al}} = \eta \times mm$$

$$= 0.269 \times 26.98$$

$$= 7.26 \text{ g}$$



$$\frac{\frac{3}{2} \text{O}_2}{1 \text{Al}_2\text{O}_3} = \frac{x \text{O}_2}{28.97}$$

$$\frac{3(28.97)}{2} = x \text{O}_2$$

$$\eta_{\text{O}_2} = 43.46 \text{ mol}$$



$$\begin{array}{l} m \rightarrow 73.3g \\ mm \rightarrow 84.01 g/mol \\ \eta \rightarrow 0.872 \end{array}$$

$$\begin{aligned} m &= \eta \times mm \\ &= 0.872 \times 84.01 \\ &= 73.3g \end{aligned}$$

$$\begin{aligned} \# \text{CO}_2 \text{ molecules} &= 5.25 \times 10^{23} \\ \eta_{\text{CO}_2} &= \frac{\# \text{molecules}}{\text{Av. \#}} \\ &= 0.872 \text{ moles} \end{aligned}$$